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ABSTRACT

This publication presents several articles about the profession of teaching as well as recent conversations with experts in the field. The articles include: "Putting National Board Certification to the Test" (David T. Gordon); "Teacher Excellence: Improving the Conversation" (a conversation with Ann E. Harman); "What Teachers Know--and Don't Know--Really Does Matter" (Dennis Sparks); "Retaining the Next Generation of Teachers: The Importance of School-Based Support" (Susan Moore Johnson and members of the Project on the Next Generation of Teachers); "Arming Teachers with Survival Skills" (a conversation with Katherine K. Merseth); "Teachers Leading Teachers" (Karen Kelly); "How the 'Green-Eyed Monster' Hinders Innovative Teachers" (Julie M. Wood); "Collaborative Assessment: Putting Teachers in the Driver's Seat" (Anne C. Lewis); "Teacher 'Rounds': Using a Medical Tradition to Improve Practice" (Nancy Walser); "Building Good Working Relationships between Practitioners and Researchers" (Eliane B. Rubinstein-Avila and Carola Suarez-Orozco); "Solving Problems with 'Action Research'" (a conversation with Pedro Noguera); and "Schools Get Creative to Find Good Substitute Teachers" (Karen Kelly and Michael Chavez Reilly). (SM)

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Teaching as a Profession

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HARVARD EDUCATION LETTER
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Introduction

In recent years, debates about improving K–12 education have focused increasingly on improving the preparation and performance of teachers. Professional development, career ladders, better incentives and rewards, and stricter accountability have all been offered up as tools for raising teacher professionalism.

This volume, the eighth in our Focus Series, brings together the most important articles previously published in the *Harvard Education Letter* about the profession of teaching, as well as recent conversations with experts in the field. Some questions these articles address include: What are the benefits of co-teaching? How can collaborative assessment improve teaching? Is Asian-style lesson study an effective professional development tool? Do lead-teacher programs attract talent to the profession or undermine school unity? Is National Board Certification a boon to the profession or a boondoggle? What changes must be made to keep the next generation of teachers on the job?

In keeping with the *Letter*'s mission to provide a jargon-free link between research and practice, these articles highlight the work of both scholars and school practitioners—offering classroom-tested solutions for improving the way teachers work and the conditions in which they do so.

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Putting National Board Certification to the Test

After years of development, this credential for veteran teachers is drawing high praise—and tough questions, too

By David T. Gordon

In February 1997, David Lustick was itching for a challenge. He had earned a master's degree in education and taught high school chemistry in New York City for four years. Now he was in São Paolo, Brazil, teaching at the American School. It was after midnight, and Lustick was watching President Bill Clinton's State of the Union Address on television. "To have the best schools, we must have the best teachers," the president said as he endorsed the National Board for Professional Teaching Standards (NBPTS).

Clinton noted that just 500 of the nation's three million teachers had been certified by NBPTS as accomplished veteran teachers since 1994, the first year of credentialing. He asked Congress to provide the resources to encourage 100,000 teachers to become National Board certified in the coming years. "We should reward and recognize our best teachers. And as we reward them, we should quickly and fairly remove those few who don't measure up, and we should challenge more of our finest young people to consider teaching as a career."

Has the $200 million invested by charities and taxpayers in this credentialing system been money well spent?

That was the first time David Lustick heard of National Board certification. The idea grabbed him: "I felt that my practice was unrecognized. This was a way to distinguish myself and improve my marketability for future positions." Later that year, Lustick paid the $2,000-plus fee out of his own pocket and began the process of getting National Board certification to teach high school science.

During the next seven months he prepared a 140-page portfolio of essays, sample lessons, and student work aimed at demonstrating his ability to plan lessons, teach strategies of scientific inquiry, and lead productive classroom discussions. Added to the portfolio were two 20-minute videos of Lustick at work in the classroom. Finally, he flew to Miami for an all-day test of his science knowledge through six written exercises.

Fewer than half of that year's applicants succeeded; Lustick was among them. It turned out to be a highlight of his young career—a rich professional development experience that increased his understanding of his own strengths and weaknesses as well as his confidence. "I felt much more empowered both as a teacher and as an individual. The process really forced me to stop and look at my work, to think about my performance in the classroom, to consider how students might experience my lessons—something I took for granted—and to ask, 'Is this really the best I can do?'" he says.

Since 1987, 44 states and 280 school districts have invested tens of millions of dollars to encourage teachers to try for Board certification. By the end of 2001, 16,037 teachers were National Board certified in 19 areas ranging from Early Childhood/Generalist to Adolescence and Young Adult/Mathematics. This year, 20,202 teachers have applied for certification. Based on 2001 results, more than half will succeed at the end of the 10-month process, for a total of more than 26,000 teachers—a long stride toward the Board's mark of certifying 100,000 teachers by 2006.

Why the increasing interest? Some teachers, like Lustick, do it for the challenge and enhanced prestige. Others respond to financial incentives such as bonuses and better pay. Still others expect to use the credential as a springboard to leadership positions within the teacher ranks. For most candidates, the draw is probably a combination of all three incentives.

Although just one-half of one percent of the nation's teachers are certified, their influence is greater than the numbers suggest. For one thing, they are helping to shape an emerging consensus among education professionals about what defines teacher quality. For another, they comprise a powerful constituency of professionals who demonstrate an ability and willingness to articulate those standards to their colleagues. Ninety-three percent

of candidates—both successful and unsuccessful—say they believe the Board certification process has made them better teachers. Almost as many say the process taught them to create stronger curricula (89%) and improved their ability to evaluate student learning (89%).

Like most school reform efforts of the past two decades, the program began in the wake of "A Nation at Risk," the 1983 federal report that decried the state of U.S. schools. As a result, the Carnegie Forum on Education and the Economy put together its Task Force on Teaching as a Profession. Its 1987 report, "A Nation Prepared: Teachers for the 21st Century," suggested creating a voluntary system of national certification comparable to the medical profession's licensing procedures.

With the financial backing of Carnegie and other foundations, the major teachers unions, and the U.S. Department of Education, the NBPTS was launched as a private nonprofit organization led by an all-star roster of advisors from the fields of policy, research, and practice. Drafting comprehensive, research-based standards and assessments took almost five years. The result was a widely praised credentialing system with broad support in the ranks of education professionals. Indeed, two major licensing bodies for graduates of teacher-education programs—the National Council for Accreditation of Teacher Education (NCATE) and the Interstate New Teacher Assessment and Support Consortium (INTASC)—have aligned their standards with the National Board's.

The Board has helped spark a national conversation among teachers about what constitutes good practice, an effort that aims to let teachers take control and "own" the discussion about teaching standards. To get certified, teachers must be able to explain and demonstrate their classroom practices—via ten written entries and two classroom videos—in a way that satisfies the expectations of scorers in the national office.

"This [process] has given teachers a structured environment in which to develop and use a vocabulary of good practice," says Jill Harrison Berg, a Board-certified 5th-grade social studies teacher from Cambridge, MA. "The process is really an intensive professional development exercise. It requires teachers to join in-depth conversations about their practice—and that means they have to learn to be articulate about teaching."

Teacher Excellence: Improving the Conversation

Ann E. Harman, director of research and information for the National Board for Professional Teaching Standards, is coordinating the NBPTS's efforts to beef up scholarly research about the certification process and its effects. She spoke with the Harvard Education Letter *about that work.*

The Board has asked well-known researcher William Sanders to examine the effectiveness of its teachers using his "value-added" analysis of standardized test scores. What's the advantage of using that model?

The Sanders model looks at the growth in each student's performance. When you just measure average scores in a class, you are inviting teachers to focus on kids who are just below the standard because the best chance a teacher has of demonstrating her competency is to get as many kids as possible above average. Sanders is saying that a teacher who does that is not really doing her job because some kids make no progress at all. She loses sight of the fact that she's teaching not just a class but individuals in a class. You can have very high-scoring kids who learn nothing in a particular year.

Teachers should be required to focus on them as much as on struggling kids. We need to use this assessment to get beyond the numbers game and enlarge the conversation about how to meet the needs of all our students. If not, we're losing sight of what's really important, which is the quality of instruction and quality of student learning. Until now, standardized tests are all we've given the public to evaluate student learning, so to get the conversation moving forward we first have to address that issue.

Is the NBPTS venturing into political quicksand by trying to establish direct links between the presence of Board-certified teachers and better student performance on standardized tests?

When the public thinks of student achievement it tends to think of standardized test scores, so we must address the question. But we want to broaden the conversation, too. Student performance on standardized tests is important, of course, but we'd also like to consider student achievement in other ways—for example, what students are learning,

Tough Questions

Yet for all its positive reviews, both supporters and skeptics of Board certification are pressing for answers to tough questions. Do students learn more in classes taught by Board-certified teachers? Do low-performing schools benefit in any measurable way? Why do the passing rates of minority NBPTS candidates trail those of whites by wide margins? Is the assessment biased against teachers who employ more traditional, teacher-centered instructional methods? In other words, has the $200 million investment of charitable and taxpayer funds in this credentialing system been worthwhile?

The Board isn't shying away from these and other issues. In fact, it brought more than 200 scholars to Chicago in January 2002 to discuss what research would not only address the concerns of critics but improve the process. At the conference, NBPTS officials invited proposals from all quarters of the education research community and pledged to raise millions of dollars to fund new studies. Once the studies are underway, says NBPTS director of research and information Ann Harman, the Board will step back and let the evidence speak for itself—regardless of the results (see interview, page 4).

One study already completed supports the contention that Board-certified teachers are more capable on average than those who aren't—at least as measured by NBPTS criteria. Researchers, led by Lloyd Bond of the University of North Carolina–Greensboro, compared the practice of 31 teachers who have won certification with that of 34 teachers who failed the process. They observed each teacher in class for about 75 hours, interviewed both teachers and students, and examined lesson plans. In addition, four students from each class were randomly asked to submit samples of their work for evaluation. All 65 teachers—drawn from North Carolina, Ohio, and Washington, DC—had similar education and experience.

"The differences we observed were pervasive, compelling, and consistent," the researchers wrote. National Board–certified teachers did a better job in 11 of 13 categories, including improvising and adapting lessons as situations dictate, critiquing their own performance, articulating high standards, designing lessons aligned to those standards, and showing a deep knowledge of their subject. They showed more enthusiasm for teaching, and in

how deeply they learn a subject and how effectively—that are more than standardized tests can measure.

The Board assessment is criticized as favoring those who use learner-centered progressive pedagogies, such as constructivism. How do you respond?

Very rarely do we see a teacher whom you could call a purely constructivist teacher or a purely didactic teacher. Good teachers use an array of methods all the time. Because the National Board assessment is standards based and relies on written commentaries, I have no doubt that a teacher who has a didactic style and who achieves good things with her students would do very well.

Our assessment is concerned with four things: Can teachers set high and appropriate learning goals for their students? Can they develop assignments and instruction that will help their students achieve those learning goals? Can they develop effective assessment methodologies for determining whether their curriculum has met those goals? Do they have the capacity to turn the data from those assessments into information that informs their future instruction? Teachers tell us how much this process [helps them] because it forces them to have deep and personal conversations about what they're doing, how they're doing it, and why they're doing it.

National Board certification lasts for ten years, meaning the first certificates expire next year. Is there a recertification system in place?

Not yet. But we're developing a plan to allow teachers to renew their certification so they won't have to go through the whole process again—unless they want to be certified in a different category. We're working with the Educational Testing Service on developing such an assessment. It will require evidence of classroom teaching, so you can't have moved on to another job and still be a Board-certified teacher. It will also include a content-knowledge piece, either through the assessment center or perhaps through a dissertation-type project or an action-research project to demonstrate deep content knowledge and [the ability] to impart that knowledge to students. Finally, it will require documenting one's work in the community.

This interview originally appeared in the March/April 2002 issue of the Harvard Education Letter.

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two categories—understanding verbal and nonverbal responses of children, and offering feedback to students—the Board-certified teachers also performed better, but not by statistically significant margins.

Better Educations?

Critics noted, however, that the students' academic performance got little or no consideration in the Bond study. National Board officials hope a new study of North Carolina's Board-certified teachers can find a concrete link between Board certification and improved student learning. William P. Sanders, head of assessment services for SAS in School, a North Carolina–based research and development firm, will apply his "value-added" method in examining the work of Board-certified teachers in North Carolina.

The purpose of value-added assessment is to quantify in a concrete way the impact that teachers have on their individual students by examining the progress (or lack thereof) those students make over several years on standardized tests. The method enables researchers to identify the years in which student achievement grew, shrank, or stayed the same. Doing so gives a better picture of teacher effectiveness than simply averaging test scores, Sanders contends. If, say, a student in a 6th-grade class scores well above average while another scores at rock bottom—just as they did the previous year—combining their scores might suggest an acceptable, if not spectacular, performance by the teacher. A value-added analysis would reveal that neither student made progress in the teacher's class.

One study showed Board-certified teachers outperforming their peers in 11 of 13 categories.

In Tennessee, Sanders concluded that the connection posited by many researchers between students' academic performance and such factors as socioeconomic status was not as important as teacher effectiveness. "I can adjust for race, socioeconomic status, school location, [and] class size, and come up with different results," he says. "The one thing that you can never hide is teacher quality. It is the single most important factor."

Critics of Sanders' work argue that even the best teachers may not be able to compensate for lack of family involvement, class size, students' prior knowledge, and other factors. And then there's the fact that Sanders' method relies on standardized tests, which some would say don't necessarily tell what students have learned in a particular class but what they have learned from all sources, including family, friends, and media.

Sanders has rich soil for his North Carolina project: the state has 3,660 Board-certified teachers, most among the states and nearly a quarter of the national total. That is due in part to generous incentives. Board-certified teachers earn 12 percent more than their noncertified peers from the state; in districts like Charlotte-Mecklenburg they earn another 10 percent on top of that. In addition, North Carolina administers end-of-grade standardized tests for students in grades 3–8 and end-of-course tests for high schoolers, providing a significant body of data for Sanders to analyze. He expects to begin publishing results later this year.

Adverse Impact

Another top research priority for the National Board is to reduce the discrepancy in pass rates between white teachers and teachers of color. While 53 percent of white candidates for certification passed in 2001, just 22 percent of African Americans and 38 percent of Hispanics did. Is there some bias hidden in the portfolio assignments? Or in the way portfolios are scored? The Board asked UNC–Greensboro's Lloyd Bond, a respected African American researcher, to look for answers. He conducted a small study and found nothing in the process itself to account for the discrepancy. "Rather, adverse impact may well be traceable to more systemic factors in U.S. society at large," he concluded, and suggested more research.

Gloria Ladson-Billings of the University of Wisconsin–Milwaukee and Linda Darling-Hammond of Stanford University took up the issue, looking at how the work of urban teachers of color gets evaluated by teacher assessment programs, including the National Board's. According to the researchers, these teachers face significant obstacles to becoming NBPTS certified. They don't get as much institutional support, incentives, and collegial encouragement to pursue certification as their white counterparts typically do. Also, they tend to teach a greater proportion of underachieving students, teach in isolation with fewer professional development opportunities, and have less familiarity with the formats and requirements of such assessments.

Furthermore, the researchers' review of educational literature on what constitutes "good teaching" revealed that such definitions do not include some of the skills and strategies employed by successful teachers of urban students of color. Research shows that such teachers usually make special efforts to develop caring relationships with students—sometimes in a way that might appear too informal, too "parental" to outsiders. These teachers also improvise ways of delivering curricula that might otherwise be out of sync with the students' cultures, experiences, and communication patterns.

"But how is a sense of caring and cultural solidarity exhibited in an assessment? What words, gestures, pieces

of evidence can be collected that demonstrate the connection between a teacher and her students?" asked Ladson-Billings and Darling-Hammond in a report written for the National Partnership for Excellence and Accountability in Teaching. Since the NBPTS assessment doesn't appear to take into account such relationships, some of the methods employed by urban teachers might not be measurable by scorers at the national office.

Content vs. Pedagogy

Of course, disagreements about defining good teaching are not limited to questions of racial and cultural differences. For example, the Board has been especially criticized for overemphasizing teaching methods at the expense of content knowledge. Michael Poliakoff of the National Council on Teacher Quality (NCTQ) is one such critic. "[The National Board] doesn't encourage mastery of subjects as it should, nor does it ask teachers to show that their teaching translates into student achievement," he says. "A master teacher has to be a master at getting results. The process of teaching doesn't matter so much if you don't know what you're teaching and if students don't learn."

"A master teacher has to be a master at getting results. The process of teaching doesn't matter so much if you don't know what you're teaching and if students don't learn."

The NCTQ, which is based in Falls Church, VA, is partnering with the nine-state Education Leaders Council to develop its own advanced certification for veteran teachers and alternative certification for new teachers with $5 million in seed money from the U.S. Department of Education. The new American Board for Certification of Teacher Excellence will certify teachers based on how well they and their students perform on standardized tests.

A different but related concern is raised by Robert Burroughs, assistant professor in the College of Education at the University of Cincinnati, who notes that the process "may be as much an evaluation of a teacher's writing about his or her teaching practice as it is an evaluation of the teaching itself." Burroughs, who has coached more than 100 candidates for NBPTS certification at all grade levels, writes in the *Journal of Teacher Education* that "candidates must solve a number of rhetorical problems" in the course of preparing a portfolio. "Like a club, NBPTS has a particular way of talking [standards] and a particular way of doing [portfolio formats]," he writes. "Because these particular ways are often unfamiliar, candidates can often feel like outsiders, vulnerable to worries about adequacy and susceptible to bouts of defensiveness."

Burroughs points out that some candidates have trouble imagining their audience. Who are the unseen, unknown judges that will read this stuff? Some teachers also question whether they can adequately capture the complexity and dynamics of their practice in writing, such as the "tacit knowledge" earned through years in the classroom. Are all excellent teachers articulate about their practice? Are all those who are articulate about their practice excellent teachers?

Board Games?

Questions about performance also raise concerns about cutting corners in the application process. Michael Podgursky, an economist at the University of Missouri–Columbia, has argued that long-distance judging of applications makes cheating more likely. He points out that no input is requested from local school administrators who know the applicants and their work—a significant departure from the medical model in which supervising physicians weigh in on a young doctor's competence.

Staging video performances is another concern, says Brent Stephens, a Boston elementary school teacher who was certified last year. Stephens says that, in his experience, teachers and their coaches discussed removing all but the best-behaved kids from a class before shooting video. "It ought to be appalling to anybody," he says, "but a lot of teachers did it. So you see these videos of eight quiet kids in a conspicuously empty classroom. That sort of thing wasn't discouraged. And as more people get certified and help each other, the opportunities for gaming the system will grow."

Ann Harman of NBPTS says that cheating is no surprise but also not a great concern. "Any testing program has its cheaters, and we deal with them harshly. Anyone caught cheating is disqualified for life." She also questions whether removing certain kids would be effective: "It's not a strategy I would recommend because it doesn't give you the best opportunity to show what you can do. In fact, highlighting classes where students may present a difficult challenge is a better strategy to demonstrate competence."

Policy Issues

While the NBPTS tries to work out its research and logistical questions, a number of practical issues challenge policymakers. Since its inception, the Board has focused on identifying what it considers master teachers, leaving questions about how that designation is used to state and local school boards, says Susan Moore Johnson,

Pforzheimer Professor of Teaching and Learning at the Harvard Graduate School of Education. In the highly localized landscape of U.S. education, a national credential takes on very different meaning from district to district, especially in terms of teacher pay, recruitment, retention, and promotion.

As the number of National Board–certified teachers grows, national and local policymakers, union leaders, and K–12 administrators will have to decide what practical meaning such a certification should have:

- Will it become a nationally portable credential, so that teachers can pursue opportunities in new districts rather than going to the back of the line with each new job they take? Johnson points out that, although most U.S. professions reward mobility, teaching stymies it because of localized contracts.
- Will the present level of financial support and big bonuses from states and districts continue? Last fall, Virginia cut back its bonus to newly certified teachers from $5,000 to about $1,632 and its annual salary bonus from $2,500 to $816, disappointing many who had been drawn by the pay increase.
- Will affluent districts poach teachers with bonuses that poorer districts can't match? In Virginia, Board-certified teachers who may lose their state bonus money might be tempted to move to higher-paying districts like Fairfax County. On the other hand, some districts are using bonuses to attract teachers to schools that need the most help: in San Francisco, teachers can earn $80,000 in bonus money over the course of ten years for working in low-performing schools.

Think of all the measures taken in the past two decades to improve U.S. schools: changes in administrative structures, in testing and assessment, in curricula and standards, in school schedules, in graduation requirements and promotion policies. The effort to ensure that teachers—those who actually spend their days with students—are highly skilled and motivated to improve their practice is arguably the most important measure communities can support.

Early research suggests that National Board certification may be a way to do so. Its requirements are certainly more rigorous than those of standard certification programs. At the same time, it can give teachers, who so often practice in isolation, the opportunity to join a larger community of practitioners and have a say in the national dialogue on what constitutes good teaching. But like all reform measures, the success or failure of Board certification will depend on how one question gets answered: What's in it for students—and not just in well-off communities but in poor ones, too?

This article originally appeared in the March/April 2002 issue of the Harvard Education Letter.

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What Teachers Know—and Don't Know—Really Does Matter

Although finding time for staff development is a constant challenge, schools that skimp do everyone, and especially students, a disservice

By Dennis Sparks

While the old adage "What you don't know can't hurt you" may sometimes be true, ignorance is not bliss, especially when it comes to educating this nation's students. A survey of more than 4,000 teachers by the U.S. Department of Education found that most teachers have limited preparation in the academic content we want our young people to know. While states are beginning to raise licensing requirements and introduce more rigorous testing for new teachers, these measures will have little effect on raising the level of skills and knowledge of the more than three million teachers already in the classroom.

To complicate the problem, today's teachers face a tougher assignment than educators from previous generations. They must raise the performance of a more diverse and disadvantaged student population than ever before. And they must meet tougher national standards while introducing new technologies and mainstreaming special education students.

This situation demands that teachers be learners throughout their careers. What other major U.S. industry involved in well-publicized global competition—as U.S. schools are—would not invest generously in the continuous retraining of its employees? Unfortunately, both educators and the public have ambivalent feelings about teachers themselves becoming learners. While recognizing the importance of high-quality teaching, both groups are concerned that staff development detracts from valuable classroom time and doubt that investing in teacher learning yields improvements in student learning.

What other industry involved in global competition would not invest in retraining its employees?

This skepticism may explain why so few teachers have had the professional learning opportunities they need. Only 20 percent of teachers in the U.S. Department of Education survey said they were confident in using new technologies or working with students from diverse backgrounds, with limited proficiency in English, or with disabilities. The survey also found that only 19 percent of respondents had been formally mentored by another teacher. Two-thirds had never participated in a formal induction program when they first began teaching.

In the past, such skepticism about staff development may have been justified. New research on teacher development, however, indicates that students, not just teachers, benefit from well-designed staff development programs. For instance, David Cohen of the University of Michigan found that California teachers who participated in sustained professional development based on mathematics curriculum standards were more likely to use reform-oriented teaching practices and have high-achieving students.

Staff development programs work best when designed to deepen teachers' knowledge of the content they teach and expand their repertoire of research-based instructional skills. These programs provide ongoing classroom assistance in implementing these new skills, create regular opportunities for serious collaborative work, develop teachers' classroom assessment skills, and connect teachers to other professionals within and beyond their schools. But the potential of any educational improvement program will be wasted unless teachers have the training, follow-up, time, and other forms of support they need to implement them.

The public needs to support quality staff development. Efforts to expand teachers' knowledge and skills will pay off for students if staff development is tied to clear and high standards for student learning and if every teacher is given ample time to learn, absorb, and implement the new techniques and technologies. Only then can we create a teaching force that is prepared to teach in tomorrow's classrooms.

This article first appeared in the July/August 1999 issue of the Harvard Education Letter.

For Further Information

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Retaining the Next Generation of Teachers: The Importance of School-Based Support

Clever incentives may attract new teachers, but only improving the culture and working conditions of schools will keep them

By Susan Moore Johnson, Sarah Birkeland, Susan M. Kardos, David Kauffman, Edward Liu, and Heather G. Peske of the Project on the Next Generation of Teachers

Throughout the United States, school officials are either anticipating or already experiencing a teacher shortage. The projected need to fill 2.2 million vacancies by 2010 will be intensely felt in high-poverty schools and in certain subjects (math, science, and foreign languages) and programs (bilingual and special education). Recognizing this, policymakers are devising ways to make teaching more attractive, and the competition for high-quality teachers is fierce. Recruiters in various districts can now waive preservice training, offer signing bonuses, forgive student loans, and even provide mortgage subsidies or health club memberships. While such strategies may well increase the supply of new teachers to schools, they provide no assurance of keeping them there, for they are but short-term responses to long-term challenges.

The challenge of attracting and retaining quality teachers is heightened by increased pressure for district and school accountability, often in the form of high-stakes testing and mandated curricular standards. In response to these mandates, districts are introducing reforms and initiatives at a frenetic pace. As a result, new teachers are struggling to learn their craft in dynamic and frequently chaotic environments.

New teachers often struggle to learn their craft in dynamic and chaotic environments.

At the Project on the Next Generation of Teachers, our research suggests that the key to addressing teacher shortages lies not in attractive recruitment policies but in support and training for new teachers at the school site. For it is in schools and classrooms where teachers must find success and satisfaction. It is there they will decide whether or not to continue to teach.

As Richard Ingersoll at the University of Pennsylvania has found, the "revolving door" of teacher attrition and turnover is a primary contributor to school staffing shortages, particularly in urban schools. Poor working conditions and lack of significant on-the-job training and support are major reasons why many new teachers leave the profession within five years. Our interviews with 50 first- and second-year Massachusetts teachers working in a wide range of schools revealed that many who are eager to become teachers find that they need much more encouragement and direction than their schools currently provide.

For instance, we found that new teachers had few of the traditional supports that one might expect to be routine. They reported receiving little guidance about what to teach or how to teach it. Instead, most described struggling on their own each day to cobble together content and materials, often with no coherent, long-term plan for meeting specific learning objectives. Although virtually all of the new teachers we interviewed had official mentors assigned by their districts, those mentors frequently taught in different schools, levels, or subjects, and meetings with them were intermittent and brief at best. Our respondents yearned for ongoing observations and feedback, but classroom visits by colleagues and administrators were rare.

Learning to teach well is slow, difficult work. Managing a classroom, choosing or creating curriculum, developing sound instructional strategies, accurately assessing student understanding, and adjusting to student needs are complex tasks, and new teachers need time and support to develop the necessary knowledge and skills. However, few of the new teachers in our study said their schools were organized to help them cope with difficulties and become better teachers. As novices, they were eager to watch the experts and develop their craft under guidance, but only a small number of our

respondents had access to the wisdom of experienced colleagues.

Neither the structures nor the cultures of their schools seemed to be geared toward their needs as novice teachers. Schedules rarely provided regular time for joint planning and observation, nor was such collaboration expected or encouraged. Meetings were designed to dispense information to individuals rather than to share struggles and strategies, which is necessary to fulfill a collective responsibility for educating the school's students. Mentoring and other induction programs were limited because they were not embedded within a professional culture that valued and supported these relationships and activities. In the worst cases, school leaders played no role in creating a culture that was welcoming and supportive to new teachers.

Few new teachers say their schools are organized to help them become better teachers.

The new teachers who reported feeling the most supported described their schools as having what we called "integrated professional cultures." There, new teachers could expect frequent and meaningful interaction among faculty members across all experience levels, and an appropriate novice status that accounted for their developmental needs while not underestimating their potential contributions. In addition, responsibility for the school and its students was shared among all colleagues within the school. In contrast, many new teachers found themselves subtly excluded from professional contact with veterans. Others, particularly those in charter schools that were staffed mostly with novices, found that there were no senior teachers to whom they could turn for advice or expertise.

While states and districts can assume responsibility for increasing pay, reducing or altering entry requirements, or creating career ladders, such initiatives will ultimately make little difference if a teacher is dissatisfied with teaching. And it is at the school site, rather than at the district level, where key factors influencing new teachers' experiences converge; it is there that induction efforts should be centered. Well-matched mentors, curriculum guidance, collaborative lesson planning, peer observation, and inspired leadership all support new teachers in ways that recruitment incentives never can.

The success of school-based induction programs hinges on how teachers work together, and the principal can play a central role in establishing faculty norms and facilitating interaction among teachers with various levels of experience. Successful induction may also be promoted by having teachers and principals play greater roles in the hiring process and in selecting their future colleagues. School-based hiring can be an important tool for shaping professional culture and building school capacity.

Establishing such support programs would benefit not only new teachers, but all teachers in schools striving to improve instructional practice. For example, novices and veterans both benefit from frequent and meaningful interaction with colleagues. Veteran teachers may well learn from and with their novice colleagues about standards-based instruction, the latest approaches to literacy, or strategies for integratin!g technology into the classroom. Therefore, the benefits of these school-based efforts are not limited to novice teacher induction, for they provide renewal for experienced teachers and the foundation for school-wide improvement.

Improving working conditions and restructuring schools to support individual, group, and organizational learning is a big task. While teachers and principals must do most of the heavy lifting, fostering integrated professional cultures and creating truly supportive school-based induction programs will require time and money, resources often in short supply in public schools. As policymakers direct new resources into recruitment, they would be wise to redirect a good portion of those resources toward the schools, for it is at the individual school site where the potential to address the teacher shortage truly rests.

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Arming New Teachers with Survival Skills

A conversation with Katherine K. Merseth about rethinking teacher ed

In 2001, Katherine K. Merseth returned to directing the Teacher Education Program at the Harvard Graduate School of Education, a program she founded in 1983. Her charge: to redesign the curriculum to train teachers to work in urban schools in an era of standards-based reform and tougher accountability for teachers. She spoke with the Harvard Education Letter *about what that transformation entails.*

How can teacher ed programs make the profession more appealing to young teachers?

We need to find more ways to emphasize leadership and arm new teachers with the skills to become change agents. Simply putting well-trained, competent teachers in dysfunctional schools is a recipe for disaster. They'll leave. Fifty percent leave in five years, and everybody scratches their heads and wonders why. Money is important, but it's not the reason that people leave. They come into the profession believing that they can make a real difference, but the bureaucratic obstacles they face seem insurmountable.

Simply putting well-trained, competent teachers in dysfunctional schools is a recipe for disaster.

What are some survival skills new teachers need?

Teachers must reflect on their practice and make that a habit. Teacher research is important if they are to really understand the situations they're in. Also, they need to understand school reform strategies—what's been tried, what's worked, what hasn't, and what could work in the future. By doing so, they will begin to understand why they're making progress on a problem—or not.... And of course, teachers have to become effective pedagogues with a whole repertoire of skills.

Critics of ed schools say that teacher training should focus less on pedagogy and more on content—that if teachers knew the content, the pedagogy would take care of itself. How would you respond?

Teachers do need that fundamental content knowledge. But they also need to be able to understand how children learn, the different points of view, perceptions, conceptions, and understandings that they bring to learning. It's important to have techniques in your repertoire for understanding the way kids make sense of things.

Can you explain to me why one-half divided by two-thirds is three-fourths? Don't tell me how to do it, because that's what many people will do. Give me an example. Tell me a story that represents that equation. Explain why it works the way it does. We all know you invert and multiply. But why? Or as a kid once said, "If x equals five, why did you call it x? Why didn't you just call it five?"

There are instances where you need to be able to think like a kid. You also need to be able to draw on the content knowledge itself. There are plenty of people teaching mathematics in particular who don't have the content background. But that's not to say that simply having the content background will make you an effective teacher. You've got to have both content and approach.

So learning how to get to know kids is an important part of teacher ed?

You bet! In order to be an effective teacher, you must understand your audience. You must understand the kids that are sitting in front of you. Kids aren't empty vessels that we just pour information into. That's the old model. In this world of increasing diversity and increasing accountability, we can't afford to have kids not "get it."

So a key piece of teaching is being able to read your students, differentiate your instruction based on your assessment of the individual kids, and develop 14 different ways to talk about how to factor an equation. Some kids will learn best visually. Others will learn best with words. Others learn best by talking with a peer. They may speak different languages than many of our teachers do. They may come from different socioeconomic and home situations than our teachers do. So understanding students is a challenge that is critically important.

When you talk about the importance of teacher research, are you saying that teachers need to put more effort into reading and understanding existing research or that they need to do research themselves in their own classrooms?

Both. They need to be able to look at a piece of research and say, "What does this mean for me and my classroom?" But the power and stimulus for change will come when teachers better understand what's happening in their own classrooms.

Traditionally, we haven't helped teachers know how to do that. If only one out of nine kids did their assignment for today, you can throw your hands up and say, "These darn kids." Or you can say, "Now, I wonder what this is all about. And how would I find out for sure?" That's what enables teachers to have some control over their lives. Young teachers think, "There's nothing I can do. I can't change my principal. I can't change the bureaucracy. I can't change these kids. I don't understand." Teacher research is a way of gaining some control and some power over your situation.

The core enterprise of this business is teaching and learning. It's not child care. It's not dealing with the Department of Social Services.

How can preservice learning facilitate this?

I am a huge proponent of practice-based learning from the first day. To stand in front of a classroom of kids has a way of focusing your thinking and grounding your experience. Then everything you try to do is in the service of the question of how this plays in the real world, rather than what contribution this makes to the literature.

What does reflective practice entail?

Having the time, the opportunity, and the skills to really ask hard questions about your classroom, your instruction, and your kids. Having the skill and the time to document what you know and don't know, what you want to know, and how you might find it out. But it's not only reflecting on your practice in an external way but in an internal way, too. What do you believe to be the purpose of education? What do you believe is your mission in being a teacher in the school?

I can't tell you how many teachers I've asked to finish the sentence "Curriculum is..." who say, "You know, I never thought of that before." One reason schools have such a hard time with reform is that people do not articulate what they believe. People end up working at cross purposes because they have fundamentally different views about why we educate children, but they keep all that hidden. These deeply held beliefs about purpose are huge and become evident in remarkably counterproductive ways.

It sounds like you want teachers to take charge of their own professional development.

I'm reminded of the Debbie Meier quote, "Show me a school where teachers are learning, and I'll show you a school where kids are learning." A principal should encourage investigation, inquiry, exploration, and ownership of the knowledge—just as teachers should encourage these things in kids. For something to stick, you have to do it. You have to experience it yourself. Teachers have for too long felt that they have no control. In fact, they have a huge amount of control.

From the administrator's point of view, there's the delicate balance that [NYU education professor] Joe McDonald talks about: How much clutch and how much gas? How much freedom do I give? What do I have to decide and what is best left for teachers to decide?

What should an administrator look for in a job candidate who's new to teaching?

The first thing, obviously, is whether they have the content and pedagogical knowledge they need. I would take a topic in their field and ask them to explain it to me, keeping an eye out for how they communicate and connect. Second, can they collaborate with others? We all know of plenty of superstars who don't do much for the rest of the building. In hiring, I would look for someone who values collaboration and works well with others. Third, are they someone who has the ability to reflect on what they are doing—to think about and change their practice with a can-do attitude?

What can an administrator do to keep and support them?

Before they make any decision within administrative roles, they should be able to answer the question, "What does this have to do with teaching and learning?" They need to realize that the core enterprise of this business is teaching and learning. It's not child care. It's not transportation. It's not food services. It's not dealing with the Department of Social Services. It's teaching and learning. Administrators who make that commitment first will go a long way toward retaining the best teachers.

Teachers Leading Teachers

Career-ladder and lead-teacher programs once promised to attract fresh talent by providing teachers with richer opportunities. Is it time to try again?

By Karen Kelly

On a November afternoon, Valerie Barattini is driving through downtown Rochester, NY, on the way to visit a first-year kindergarten teacher and her class. "I have to warn you—it'll be a bit chaotic," she says. "My plan is to help this teacher find ways to keep the kids' attention. We have to start with that before we can even think of moving on to instruction." As a mentor-teacher, Barattini spends half her time tutoring and evaluating first-year recruits. She says the position has given her a chance to develop new skills after spending 20 years in the classroom. Once she arrives at the Jefferson Avenue Family Learning Center, she peers into the classroom. "It's going to take a lot of work in here," she says. "But I have a plan and I'm going with it."

When Rochester started its Career in Teaching Plan in 1987, only 60 percent of new teachers got to their second year. By 1999, that number had jumped to 86 percent. In a district where 80 percent of students live in poverty and many are developmentally disabled, that first year of teaching is a shock for many recruits, says program director Carl O'Connell. Many arrive with just a few education courses and a little student teaching experience. "Most say they would have left in the first three weeks if it weren't for their mentor," says O'Connell, who oversees 200 mentors and 527 first-year teachers. "We're turning to the experts—the best teachers—to provide them with one-on-one training."

Teacher leadership challenges an ingrained culture in which teachers expect equal treatment.

Rochester's lead-teacher program is one of the few still thriving. Lead-teacher and career-ladder programs gained popularity in the 1980s as a means to give veteran teachers opportunities to advance their careers and to attract more top-notch college students into the schools. The aim was to enhance teaching as a profession by providing mentoring and administrative opportunities. But few lead-teacher programs survived the budget cuts, turf wars, and administrative turnovers that have plagued districts like Rochester. In 1986, 29 states were either implementing or already required career-ladder programs for teachers, which usually include lead-teacher positions. By 2001 only a few states, including Arizona, Utah, and Missouri, still provided funding. The result is that the once-promising effort to create a new generation of teacher leaders has stalled.

Back at Jefferson Avenue, Barattini quietly joins a circle of kindergartners playing with building blocks on the floor. Today, the group is attentive until it's time to put the blocks away. Kids are running for the basket, and the teacher is yelling for them to sit. Barattini quietly models her classroom-management technique. "Everybody have a seat, have a seat, have a seat. Everybody have a seat, on the floor," she sings in a whisper, sitting cross-legged on the floor. "Not on the ceiling, not on the door, everybody have a seat on the floor." Soon, the class is in order. An hour later, after a whispered conference with the teacher, Barattini is off to see another young teacher.

Rochester's program, developed jointly by the teachers' union and the school administration, was lauded as revolutionary when it was introduced. The four-step career ladder begins with new teachers, called "interns," who are assigned mentors who help evaluate their performance. At the end of the year, both the mentors and the interns' principals submit recommendations to a joint panel of six lead teachers and six administrators about whether to retain the intern. Approximately 10 percent are not rehired. Those who are become "resident teachers." Once they receive state certification (and tenure), they move up to the rank of "professional teacher," where they are eligible for the district's lead-teacher positions.

Lead teachers on the joint review panels also recommend ways of dealing with underperforming teachers, sometimes voting to withhold pay increases or to require emergency intervention by a mentor. "To have teachers involved in evaluations was viewed as heresy and betrayal," recalls Adam Urbanski, longtime president of the Rochester Teachers Association. "But taking responsibility for who qualifies to become a teacher and who de-

serves to remain a teacher is the job, first and foremost, of teachers themselves."

The teachers in Rochester fought for this power, yet it collides with a fundamental part of teaching culture—a close-knit, communal environment in which everyone expects equal treatment. "This doesn't exist in very many places very effectively," says Katherine P. Boles, a researcher at the Harvard Graduate School of Education and a former lead teacher in Brookline, MA. "The big issue for teacher leadership is changing the culture of the school." Because the teaching culture is not typically hierarchical, says Boles, "it's hard for teachers to imagine assuming a leadership role if we're all equal."

University of Illinois researcher Mark Smylie says this sense of equality and collegiality has been a major impediment for lead-teacher programs. For a 1997 article in the *International Handbook of Teachers and Teaching*, Smylie analyzed 208 studies on teacher leadership programs implemented before 1996 and found that their effect on school culture was mixed. Some studies found that lead-teacher programs led to "new cooperation, collaboration, and collegial spirit among teachers and administrators," while others reported increased "tension and conflict." Effective programs included clear job descriptions understood by teachers, administrators, and union leaders; release time from the classroom for lead teachers; and a precedent for teacher leadership in the school. Successful mentoring programs required training for mentors, matched them with interns in the same grade level and subject area, and recruited senior teachers who could balance mentoring work with their own classroom work.

"Taking responsibility for who qualifies to become a teacher and who deserves to remain a teacher is the job, first and foremost, of teachers themselves."

In Rochester, 2nd-grade teacher Lynn Gatto raises a more fundamental question: If the best teachers are mentoring, who's teaching the kids? Gatto—winner of a 1997 Presidential Award for Excellence in Science Teaching and an active participant in the reform movement—has not pursued a mentor position because she believes her skills are best used in the classroom. However, lead teachers say they can benefit their students in other ways than direct teaching. "When I taught, I felt I only affected the kids in front of me. With this, I affect five times as many kids," says David Gizzi, himself a former intern.

That kind of challenge can help keep talented teachers from burning out, which is a primary goal of the Milken Family Foundation's Teacher Advancement Program. The program was piloted in five Arizona schools in the 2000–2001 school year and in nine South Carolina schools in 2001–2002. It includes six different types of teaching positions, an hour a day for professional development work, monetary bonuses linked to student performance, and part-time teaching opportunities for professionals from other fields. The career program's top rung is occupied by master teachers, who are paid an additional $7,000 a year and are in the classroom half-time. The rest of their day is spent leading teachers in their subject area in daily "professional development blocks," where teachers conduct peer reviews or try new curriculum materials.

Of course, while such programs sound good, many argue that they should also be judged by how well they affect children's learning. Mark Smylie found that in several surveys conducted of teachers and administrators, the majority reported positive effects on student achievement. Similar findings were released by the Missouri Department of Elementary and Secondary Education. Of Missouri's 524 school districts, 309 participate in a career-ladder program, which requires teachers to work a certain number of hours outside the classroom. Researchers compared the standardized test scores of schools with at least three years in the career-ladder program to those that didn't participate. In the 1999–2000 school year, "the schools that have career-ladder programs had a significantly higher percentage of students in the top two levels for elementary school students in math, science, and communication arts than the non-career-ladder schools," according to the researchers.

In Rochester, the district's department of Research, Evaluation, Testing, and Records tracked student performance on the New York State English Language Arts 4th-Grade Assessment. It found that students with "mentored teachers had ... a higher English Language Arts performance, even after controlling for teaching experience and the 3rd-grade performance of the students." Plus, the number of first-year teachers in the 4th grade increased from nine to 31 in two years, while student performance on the English Language Arts assessment "substantially increased."

Many educators are disappointed with the Rochester experiment because so many of the original positions have been cut. Still, there's evidence that Rochester's Career in Teaching Program has improved communication among teachers and between teachers and administrators, who treat each other more like colleagues than they used to, says program director Carl O'Connell. "When they're sitting on [an evaluation] panel, you can't tell the administrators from the teachers," he says. "They argue about their philosophies rather than their job descriptions."

At one time, O'Connell says, becoming an administrator was the only way talented teachers could advance their career. Now he hopes a growing number of them will find those opportunities within their own profession.

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How the 'Green-Eyed Monster' Hinders Innovative Teachers

Collegial jealousy—and the cold water it throws on efforts to improve—may be one of the most important challenges teachers face

By Julie M. Wood

O! Beware, my lord, of jealousy;
It is the green-eyed monster which doth mock
The meat it feeds on ...
— *Othello*, William Shakespeare

As an elementary schoolteacher in suburban Boston, Michelle Jacobson talked enthusiastically to individual colleagues during lunch breaks about her students' successful electronic slide-show creations and about how such innovative technology had invigorated the learning of her 1st- and 2nd-grade students. But she knew better than to talk that way to a group of teachers. She had heard other colleagues be criticized for such "showing off" and, even without bragging, felt shunned herself by some teachers for introducing new practices into the classroom.

While studying primary schoolteachers who use innovative technologies for my doctoral dissertation, I was struck by an unexpected finding: pioneers like Michelle sometimes downplay their expertise or novel teaching strategies rather than risk rousing jealousy in their peers. In other words, they go underground. In the typical "all for one, one for all" elementary school culture, drawing too much attention to oneself is seen as showing off and invites a hostile response. It can also contribute to a growing uneasiness among traditional teachers that their hard-won teaching style is rapidly becoming obsolete—and so are they. This highlights a distressing paradox: although most teachers support student achievement, they are often ambivalent about, or even hostile toward, the success of their peers.

Despite the contention by experts such as Seymour Papert and Jan Hawkins that technology training should logically begin with young children, and despite the fact that young children spend much of their school day learning to read and write, many administrators and practitioners don't have a good understanding of strategies for using technology to support early literacy instruction. Couple this with collegial jealousy of those who do use media-enhanced teaching practices, and the classrooms of techno-savvy teachers can easily become pockets of innovation that fail to engender schoolwide change.

In considering the implementation of technology, experts have focused mainly on issues associated with teacher training (e.g., hardware, software, and technical support) and the cultural issues associated with teacher-generated change. However, they have paid scant attention to the complex psychological processes that teachers undergo when some become innovators and change agents and others do not. By merging these bodies of knowledge, we can better help teachers cope with the

problem of collegial jealousy that can derail innovative initiatives in schools.

Harvard's Robert Kegan, an expert in adult development, suggests in his constructive-developmental personality theory that one salient characteristic of adults is their dependence on others for a sense of self—that "one's self-definitions, purposes, and preoccupying concerns are essentially co-defined, co-determined, and co-experienced." Normally, adults will eventually move into another, more autonomous stage in which the self determines its own standards, morals, and belief systems—one in which being liked is no longer a preoccupation. Yet there remains a powerful yearning for both community and personal agency—that is, while people generally want to contribute to the overall welfare of others, they also desire recognition for their unique qualities and accomplishments—and many people alternate between the two stages.

According to Kegan, institutions do not typically serve our longing for both community and agency well. Elementary schools, for example, place a greater emphasis on community, where collaboration and sharing are highly valued forms of behavior—more valued perhaps than individual innovation. As Dan C. Lortie has written: "The traditions of teaching make people who seek money, prestige, or power somewhat suspect: the characteristic style in public education is to mute personal ambition."

Though most teachers support student achievement, they are often ambivalent about, or even hostile toward, the success of their peers.

Thus, in a typical school, innovative teachers may bend over backwards to avoid threatening the school's sense of community, so that in trying to achieve a balance between sharing their expertise and overpowering others, they downplay potentially effective new resources and techniques.

During the 1996–97 school year, I examined the practice of three primary-grade teachers and their strategies for integrating new technologies into reading and language arts curricula. Although the findings are limited to these three case studies and therefore are not generalizable, the fact that these teachers attempted to develop their vision without threatening their peers has important implications for other practitioners who stand in the vanguard of school change.

What happens when a teacher tries to bring innovation into the classroom? That depends on how that person deals with collegial envy and jealousy. In my study, two of the teachers (one was Michelle) felt that, while comfortable with their own knowledge and level of innovation, they were not ready to "publicly" share with other teachers their cutting-edge techniques—such as conversing with parents via e-mail or using interesting Internet sites in classes.

The third teacher felt more comfortable in her role as an innovator and, with the support of her principal, talked openly about the changes taking place in her classroom. Because this teacher was comfortable sharing her methods and showcasing her students' activities, she was in a position to improve, expand, and use her experiences to teach other teachers how to integrate these new technologies into their classrooms. Interestingly, she worked in a district where administrators stressed the need to "hothouse" innovative practices. She was given permission to develop her own personal agency—to become a star, in other words. Professional jealousy in this case revealed itself not in only other teachers' trying to intimidate her, but in their flat-out rejection of what she was trying to achieve through educational technology.

The issue of collegial jealousy and how it can become a barrier to innovative teaching may be one of the most important challenges educators face. Most teachers value teamwork and want to be accepted by their peers; they do not want to appear to be playing a game of oneupsmanship when demonstrating their technological achievements. Yet what they have to share about the effective use of new technologies can have important benefits for other teachers, and, especially, for their students. Students who are knowledgeable about ways to use computers to aid their own learning will be better prepared for the types of jobs they will encounter in the 21st century.

Throughout the past decade, studies have shown that for technology to be successfully integrated into classrooms, teachers need release time to experiment with computer software, the Internet, and other innovations away from pressures of the classroom; follow-up support when implementing new techniques; and ample opportunities to network with colleagues beyond their own school through graduate-level courses, technology groups, and professional conferences. Studies also show they need firsthand exposure to successful models of teaching using new technologies, which is unlikely to happen in a school where even subtle forms of professional jealousy can interfere with the sharing of technological expertise.

At the same time, I suggest that we need to seriously consider ways to support personal development along with professional development. This combination would help teachers become innovators without threatening their colleagues in the highly collaborative elementary school culture or rousing the green-eyed monster.

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Collaborative Assessment: Putting Teachers in the Driver's Seat

The process challenges teachers to learn more about their own practice and share responsibility for the success of all students

By Anne C. Lewis

When teachers in the Monaca School District near Pittsburgh were first presented with new content standards in 1995-96, "they did what every good teacher would do—put them in a drawer," says Kathy Dabrowski, who is principal of three small neighborhood elementary schools in the 880-student district. But then Dabrowski countered with her own requirement: teachers had to turn in student work along with weekly lesson plans based on the new standards. Dabrowski followed up by discussing these plans and student work with the teachers, asking such questions as, "What are you doing here to get this work to a higher level?"

Monaca teachers from each grade level now spend half a day every month looking at student work together. Staff development experts from the Institute for Learning at the University of Pittsburgh's Learning Research and Development Center (LRDC) help teachers with these discussions. Also, teacher representatives from each of the grade levels in the district meet with parents weekly for a few hours after school to look at how student work is measuring up to standards.

Persuading teachers to discuss their students' work and compare it with that of their colleagues' students would have been a rarity only a few years ago.

Persuading teachers to discuss their students' work and compare it with that of their colleagues' students is a delicate process that would have been a rarity only a few years ago. Yet today there are thousands of teachers using student work for a variety of purposes that go far beyond the practice of assembling portfolios. Three things have only recently made this possible: a political and policy climate that wants proof that students are learning to higher standards; reform efforts that now target schools as well as districts and that encourage teachers to share responsibility for student success; and, finally, the emergence of a research base that is giving teachers better clues as to how to move to higher levels of learning.

Teachers have always examined student work, but almost always alone and for the purpose of grading an individual's work. The idea of sharing student work, however, has become more common with the growing use of portfolios as an alternative or supplement to standardized and other formal tests. The practice of focusing on student work was begun in the late 1980s by a small number of academics as a way of getting teachers in touch with how students learn. The archival project of student work collected by the Prospect School in Vermont and Project Zero at the Harvard Graduate School of Education were primary influences.

In 1994, the federal Title I program began requiring that disadvantaged students receiving Title I services be held to the same standards as all other students. Since then, every state has developed new standards that set forth what students should accomplish. In addition, many districts are developing standards and assessment systems on their own. No matter what type of standards are adopted, however, student work has become a tool for making sure those expectations get translated into the classroom.

Since few teachers are actually involved in developing standards, the rest "are not going to learn this stuff by reading books of standards," says Katherine Nolan, a consultant who helped write the New Standards, a comprehensive set of performance standards for five subject areas. Only when teachers come together to discuss standards and what high-quality work looks like can that knowledge get out of teachers' heads and into discussions with colleagues, she says.

While the standards movement has fueled interest in looking at student work, the process continues to be used for a variety of purposes: for scoring and holding schools responsible for student performance; for writing standards and helping teachers understand them; or simply for helping teachers think about their teaching and learn more about their students. For example, student work was used as a tool by the LDRC and the National Center on Education and the Economy in Washington, DC, to formulate proficiency exams based on the New Standards. In Kentucky, professional development activities centered on student work are helping teachers understand the differences among the levels on the state's assessment tests (novice, apprentice, proficient, and advanced).

Positive Effects

While consistent links to higher achievement are only anecdotal at this stage, collaborative assessment of student work is showing some positive effects, especially in the area of professional development. Researchers who studied the reactions of 250 teachers who participated in New York State's effort to develop performance assessments through scoring student work decided the exercise did provide a variety of learning experiences for teachers. "Looking closely at student work in collaboration with colleagues helped teachers learn about standards, their disciplines, their students, and teaching," reported Beverly Falk and Suzanna Ort of Teachers College at Columbia University.

Lauren Resnick, director of the Learning Research and Development Center at the University of Pittsburgh, told those attending the 1997 assessment conference of the Center for Research on Evaluation, Standards, and Student Testing that when professional development centered on discussions of standards and student work, teachers of low-performing students in districts using the New Standards were able to "move these kids off the bottom."

Elusive Idea

Though the phenomenon of analyzing student work to promote change in classroom practice is spreading quickly, it's still an elusive idea. No commercial entity has yet boxed the process into an easy, over-the-counter set of directions. No one proponent or strategy yet dominates either, although two approaches have emerged as the most common.

A How-To Guide to Collaborative Assessment

The following protocol was developed by Steve Seidel and colleagues at Harvard Project Zero. This "Collaborative Assessment Conference" brings teachers together to talk about student work. The protocol is based on the notion that students are often working on problems or exploring interests beyond the parameters of a given assignment. Project Zero is an education research organization based at Harvard Graduate School of Education. (This process should take approximately 45 to 60 minutes.)

The purpose of this practice is to provide opportunities for teachers to examine and discuss pieces of student work in a nonjudgmental, structured conversation. It is designed to facilitate discussion in small groups. Through these conversations, participants can learn from the various perspectives and expertise of their colleagues, raise questions about the student and his/her work, see that student work is a reflection of the child and the learning environment, and use this opportunity to reflect on ways to improve learning environments for groups of children as well as the individual child.

1. *Getting started.* The group chooses a facilitator to guide participants through each phase of the conference. The presenting teacher shares copies of the selected work, without making comments about the work or the assignment.
2. *Describing the work.* The group describes any aspect of the work they notice. They do not make judgments about the quality of the work or their personal preferences.
3. *Raising questions.* The group asks questions about the child, the assignment, the curriculum, or any other area. The presenting teacher takes notes but does not respond.
4. *Speculating about what the student is working on.* The group "guesses" about what the child was working on when he/she created the piece. This could include ways the student was trying to fulfill the assignment, skills the child was trying to master, questions the child was trying to answer, or ideas he/she was trying to express.
5. *The "presenting teacher" speaks.* The presenting teacher now adds her perspective on each of the previous phases of the conference. She provides her own perspective on the students' work and responds to any questions or issues raised by the group.
6. *Implications for teaching and learning.* Everyone is invited to share any thoughts that have been stimulated by the examination of the student work. These could include thoughts about their own teaching, student learning, or ways to support a particular child in reaching his/her goals.
7. *Final reflection.* At this time, participants have an opportunity to reflect on the process of their own thinking during the conference.

Adapted with permission from Harvard Project Zero.

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The first approach assumes that standards are in place, and the task is to make sure student work reflects them. The other approach—exemplified by the Collaborative Assessment Conference developed by Project Zero (see box p. 19)—seeks to emphasize what teachers can learn by examining student work before it's judged. According to Steve Seidel, director of Project Zero, such discussions can lead teachers to look beyond their assignments and toward recognizing students' creativity, whether or not it is directly related to an assignment.

Despite the philosophical difference between these two approaches, they share some commonalties when it comes to the actual process of looking at student work. A trained facilitator often leads a group of teachers through a step-by-step format, usually called a protocol. Discussions may involve scoring work according to a specifically defined set of rubrics (descriptions that define different levels of quality from worst to best). But discussions can also focus on the quality of the assignments themselves.

Essentially, contends Ruth Mitchell, an assessment expert who works with the Education Trust, examining student work "is a strategy to look at teachers' work." Students can do no better than the assignments they are given, she contends, and if a teacher's assignment is divorced from standards, it becomes a "mystical experience" for students.

Looking at student work is essentially a strategy to examine teacher work, says one expert.

Crucial Ingredients

For many educators and schools, the hardest part may be getting started. Most experts with experience in collaborative assessment say it takes a high level of trust among staff. In the "Tuning Protocol" developed by the Coalition of Essential Schools, for example, discussions are carefully designed to keep the conversations about student work focused and away from personal criticisms. Its structure gives equal attention to feedback that is "warm" (supportive) and "cool" (more distanced). To break the ice, Katherine Nolan brings her own personal collection of student work to discussions. "If you use work too close to teachers at first, they will shut down. You have to be neutral," she says. Once teachers begin to share ideas, they can move to bringing work from their own classroom. She pushes them to ask, "Can our kids do any better than this?" and helps them build exemplars of student work from across their district.

As Nolan's example shows, another ingredient crucial to all models of collaborative assessment is the presence of an objective third party. Most schools that are trying to focus on student work rely on outside experts and/or outside funding to help them develop teachers' capacity to analyze the standards in student work and change their assignments and practices. Seidel's effort to develop conversations based on student work in Massachusetts began with consultants who spent 15-20 days a year in a school—a model he says is too expensive. The project is now working with district coaches, usually staff members who serve as resources for teachers.

Even if the expertise, time, and trust needed to stimulate group conversations around student work exist, there still is the problem of whether teachers are able to understand what the process can teach them. Researchers who studied the three-year effort to use teachers to write new standards for the North Philadelphia effort of the Education Trust found that the process "was frustrating to those without a strong background of content knowledge and a wealth of teaching techniques."

Similarly, when the Philadelphia district sought to help teachers develop units of study based on standards, school officials learned how much teachers lacked theoretical knowledge about teaching and learning. So, for 1997-98, teachers were given curriculum frameworks based on the district's standards, and summer and school-year workshops are being held to help teachers integrate standards in their disciplines, one by one, using student work as the guide. It will take four years to cover all the standards, according to Nolan, who is working with the district.

Such barriers will have to be overcome if standards-based reform is to take hold, according to University of Pittsburgh researcher Lauren Resnick. Raising standards will become the personal goal of teachers and students, she says, "only if a concerted effort is made to engage teachers and students in a massive and continuing conversation about what students should learn, what kinds of work they should do, and how well they should be expected to do it."

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Teacher 'Rounds': Using a Medical Tradition to Improve Practice

In adapting a professional development tradition from medicine, teachers gather to consider challenging cases in an effort to improve their craft

By Nancy Walser

Once a month from October through May, educators gather in a conference room at the Harvard Graduate School of Education to discuss a piece of student work. These "Rounds," sponsored by the research group Project Zero, are named after the Grand Rounds in which medical doctors consider challenging cases.

The Rounds at Project Zero aim to get teachers to take a more in-depth look at their craft by sharing, discussing, and reflecting on their practice and on their students' work. While some models use collaborative assessment to reach consensus about a rating or grade for a piece of work, Project Zero uses these sessions to "get closer to a child's purpose and recognize the challenges and accomplishments in the work," says Steve Seidel, current director of Project Zero. Participants value the chance to give a single piece of student work the attention they feel it deserves; it also enables them to reflect on their experience as educators, he says. Many take the practice back to their own schools.

An Insider's View

To get an inside view of this process, the *Harvard Education Letter* sat in on a session, which focused on a story written by a 6th grader. The story, "A Regular Legalist Day" (see p. 22), was written for Ann Jaquith, a California teacher who assigned her students a role from the Han Dynasty in Chinese history and asked them to write about it as part of an interdisciplinary course on history and English called Making Connections.

Participants (identified by first names only) are shown only the written piece as it is turned in to Jaquith. They describe the work, then raise questions about it, and, finally, speculate on what the student was trying to accomplish. The presenting teacher then answers these questions about the writer and the assignment before bringing up some dilemmas of her own.

In this edited excerpt of the conversation, participants have already figured out that the story is historical fiction set in China. They note some inherent contradictions between the sophisticated imagery and glaring grammatical problems. Some participants also note that major conflicts in the story seem to have been left unfinished. Jaquith tells the group that the student has trouble with the mechanics of writing and often lacks motivation. Although she's read the piece numerous times, this is the first time she's aware of the parallels between the stories she has told the class about her travels in China and her student's story.

Ann: I told the students a story about being in a restaurant in China and eating duck and duck's brain, and, lo and behold, it's here. And the heating of the water. That's another story that I told about China. You can't drink the water, so you have to boil it. So I'm noticing now many of the details that are in this piece are not from things that she read, but are from stories that I told in class about the conflicts. I also wondered about the ruby—how someone could get access to it in a guarded palace? If I were writing this piece, that's where I would have put my energy, not with the conflict with the brother.

Barbara P.: How did the student feel about the piece?

Ann: The way she feels about many things that she does—that she was glad to be done.

Chris: As in the big, bold font she uses for "THE END"?

Ann: Yeah. This was supposed to be a third draft, which is interesting to me. What do you do with a final piece that comes in and has so many errors? I think that there were things about it that she felt quite good about. I think that she was working on trying to use sensory images and details to give a sense of place. She loves art. One of the things that the students did in the process of writing was to draw a sketch of the house that their character would live in. We also looked at pictures of places like the Forbidden City to get a sense of what a palace might have looked like.

Chris: I think that with this kind of piece there's a real dilemma or a trade-off, because it's about history and it's also about writing. And when kids are doing his-

torical fiction, often they're not going to do their best writing because they're trying to bring in this other thing that isn't so much what they own. On the other hand, I think it's a great way to do history. Kids usually like it and say, "Oh, this is so much fun." Also, I think this is a finished thing. I wouldn't even ask her to do another thing on it.

Ann: I struggle with how hard to push her and when to just let go. Other students, when asked a couple of those questions, say, "Can I do another draft?" And her question is much more likely to be, "Am I going to have to do anything else?"

Beth: I wondered if she had done the drawing [of the house] before she did the writing. I wonder about having her visualize the other parts of the story, because it might help her key in to those parts that aren't as finished.

Barbara S.: It has to be our job to help her do a better piece. You know, I can't see this as the end state. Because her strength is the artistic, the visual, that's where she was really descriptive, and that's where you got that wonderful feeling. So I was wondering, for her, first of all, if she expressed it artistically—the conflicts, the inhumanity—and then if she came back to the writing, how much more powerful it might be.

Kevin: This might be tough because it's part of a particular history unit, but I wonder if this wouldn't be something you could come back to after a while. Not right away, but in three weeks, in two months, say to this girl, "Let's look at the ending now and see if there are any ways we can push it."

Putting Rounds to Work

Jaquith did go back to school and use this conversation in two different contexts. In a study group with eight other teachers, she continued the debate about when a piece of student work should be considered done. "We didn't reach a consensus, but we decided it's really important for students to get honest feedback," she reports.

She also had a conversation with the story's author.

A Regular Legalist Day

I opened my eyes and looked out the window.The sun was so bright I had to squint. I saw the same thing I saw every day, a maple tree and four beautiful lilies surrounding it. I stretched my arms and stepped out of bed.

I went and fetched three buckets of water from the small well outside my house. I put them on the stove and heat them up.since it took a while to heat up, I took off my robes in advance. Isaw if the water is hot enough (which it was) and poured them into my bath tub.The water was soothing so I took longer than usual. I felt it had been long enough. My skin was even beginning to wrinkle. I dried off and put my red shirt on and my pants.

I went in to my kitchen for breakfast.I had my usual; a bowl of rice with duck on top. My favorite part is the head because the brain is so tender. Just when I'm finished up I heard a knock at the door. I look to see who it was and it was none other than my brother.

"Oh hello brother ,what a surprise to see you here."I said

"I'm having a tea party ,may I borrow twelve plates from you ."he asked.

"Sure, but am I invited?"

"Yes of course my brother,"he said

"I'll be right out with the plates."

As I was taking the plates out of the cupboard a huge crash that almost made me drop the plates I was holding.

I ran out to see what happened with plates in hand. My bother was standing and an innocent look on his face with my precious vase at his feet broken into a million pieces. I let out a yelp and jumped back in horror.

"I was just looking at it when all of a sudden it floated out into mid air and dropped." he said lying through his teeth.

"It's one thing that you broke it but to lie on top of it is way to extreme.Get out of my house. I'll have to deal with you later!!!."

Now I was late for work. I ran out my door ,into my courtyard, down my unusually quiet street and in to the busy city of Changan,where I caught my usual horse drawn carriage.

"To the palace," I requested.

The driver slapped the reigns on the horse and we were off.

Though it had been three months since the student wrote the story, she remembered the assignment well and was anxious to know what had been said about it during the Rounds. "We talked about the verb tenses and I think I raised her awareness about the errors," says Jacquith. "We also talked about the unresolved conflict with the brother, and I was struck by how much thought she put into that character—that for him, punishing the populace was probably much easier than executing justice at home. ... The one-on-one attention she got had some impact, because she showed more care and consideration in her next assignments."

Jaquith says Rounds are of "tremendous value" to her as a teacher because "others notice things you don't and raise questions that keep you thinking about your practice." She also feels they are valuable for helping teachers keep an open mind when looking at a piece of work before jumping to conclusions about what a student can or cannot do, something that can be a key to helping students achieve a particular goal. "A teacher who continues to think about her practice is always asking, 'Why am I doing what I'm doing and how can I be more effective?' " she says. "These questions are very valuable for modeling learning and risk-taking to students, because that's what they need to do to succeed. And in the process of doing that, I become a better teacher. "

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In about ten minutes we arrived at the palace.

"That will be four yuan sir."

I paid him and stepped down. I saw the usual thing ; two beautiful hand carved jade gates with very detailed dragons on them. Standing to the right of them I saw Letu, the guard.

"Hello Letu," I said

"Hey Leje, The emperor is waiting for you!"

As I walked in I saw many beautiful pieces of art by famous crafts people. I walked up the stairs and saw the emperor sitting on his throne. I bowed to him and he offered me some jasmine tea.

"Hello Leje, I have a very important issue to discuss with you"

"And what is that your highness?" I asked

"Well a scrawny peasant stole a ruby from my personal treasury. What should I do?"

"I think you should cut of his hands because it will teach him a very good lesson and others will learn his mistakes."

"That's a very wise idea," he said

We discussed a few more issues and before I knew it, it was lunch time. We ate fish, pork, duck, rice, vegetables and tea. While we were eating we heard yelling out side. We instantly got up and walked to the balcony to see what was happening. When we looked down we saw an angry mob of peasants yelling about not having enough food and money to support their families.

"Guards, go shoot a crossbow into the crowd to break up the riot," He commanded. They did as they were told and sure enough every one scattered in different directions.

"Well now that that's over with, I give you permission to leave."

I quickly ran down the stairs and out the door saving just enough time to say goodbye to Letu. Since the carriage didn't come in the after noon I had to walk home. After Forty five minutes of walking I finely reached my front gate. I went inside and saw my broken vase right were I had left it .I didn't want to deal with it then so I went into my kitchen to eat. You might think I shouldn't be hungry now after that lunch but after walking so far I was Ready to eat. I made myself a bowl of rice and fish. I ate it and after a long day of work I went straight to bed.

THE END

Building Good Working Relationships Between Practitioners and Researchers

By asking the right questions and setting good ground rules, schools and researchers can have productive partnerships

By Eliane B. Rubinstein-Avila and Carola Suárez-Orozco

The cultural gap between institutions of higher education and schools is not a new phenomenon. Educational researchers, who are sometimes armed with a lot of theory and little practical experience, are viewed by practitioners as being out of touch with the challenging realities of teaching students in today's complex society.

As researchers, we often have been in the position of asking teachers to participate in studies. Many teachers have been pleased to have the opportunity to participate in research projects. Others have been skeptical about whether, ultimately, research findings will justify the disruption of their daily routines or the additional work involved. Some teachers ask, "Why do we need more research? What we need are more books and manipulatives, not more research"—although it is important to note that funding for research does not compete with funding for books and classroom materials. Others ask, "What will come out of all this anyway?" Or, finally, "What's in it for us?"

In order to build effective collaborative relationships, teachers and administrators must ask questions about study logistics and goals, and researchers must answer those questions. Based on our experiences, we suggest that school administrators discuss the following topics with researchers before deciding whether to participate in a study.

First, the most important issue is whether the proposed research project will provide the kind of information that can be used to improve educational opportunities for students. Participating teachers should know what researchers are trying to discover and who may benefit from the findings.

Second, on a more pragmatic level, the question of what impact the proposed research project will have on the day-to-day quality of life of teachers and students is a key consideration. It is important for the teacher to ask the researcher to be specific about how much student and/or teacher time will be required for the project. The amount of time participants need to commit to a project can vary greatly. A teacher may be asked simply to identify students who meet the study's criteria, a task that might take as little as half an hour. On the other hand, an intervention project may require a teacher to teach a new curriculum two mornings a week for two years.

Other key questions to ask researchers are: Will classroom observations be shared with district administrators? How will the confidentiality of teachers, students, parents, and schools be protected? How will the results be presented and where will they be published? Will the analysis of the data require teacher input? If so, how?

The most important issue is whether the proposed research project will provide the kind of information that can be used to improve educational opportunities for students.

If these questions are not answered satisfactorily, teachers and administrators should feel justified in turning down the offer to participate in the research project. If, on the other hand, concerns are met with thoughtful responses, practitioners can feel confident in agreeing to participate.

Of course, issues may arise during the course of the study. Researchers should make themselves accessible to the participants in case concerns arise. A time line and progress reports can also help sustain smooth collaborative relationships.

In some of the best school-university collaborations, researchers have worked reciprocally with participating classrooms, lending their expertise in exchange for data. These exchanges evolve naturally out of the relationships that develop during the course of a project. Some examples:

- Some university researchers volunteered to assist teachers in the classroom before, during, or after the data collection period. They team-taught, co-planned units, helped review student work, and answered journals, among other things. Numerous teachers have told us that a researchers' systematic presence in the classroom gave students extra attention. This type of collaboration can enhance the quality of data collected, as well as the authenticity in the analysis of that data.
- A doctoral student offered to conduct a few technology workshops for teachers and aides. In return, the great

majority of school personnel agreed to be interviewed three times during the school year and to meet once after each interview to discuss their experiences.

• A veteran teacher asked a researcher to help formulate a mini-study for a self-evaluation that her district was piloting. In exchange for numerous classroom observations, the researcher met with the teacher to lend her expertise on data collection and analysis for the self-evaluation. The researcher also helped make a video documenting the process the teachers used to make the self-evaluation.

• A graduate student conducting a small qualitative study for a methods course solicited ideas from teachers to come up with a question that was relevant to them. Two team teachers asked to be "shadowed" in their planning and teaching efforts in order to explore the nature of their collaboration. The result was an intimate description of the process, providing the teachers with a systematic perspective on their team-teaching for a semester. The insights gleaned from this experience, they later told her, fostered better communication among the teachers, which ultimately enhanced their partnership, job satisfaction, and, very likely, their students' learning.

While there are many wrinkles to be ironed out, teachers and researchers, armed with more knowledge about the research process, can arrange for reciprocal exchanges that will potentially enrich the learning and teaching experiences for all involved. Together, researchers and practitioners may achieve the stimulating marriage of theory with practice that is often lacking in both universities and schools.

This article first appeared in the November/December 1998 issue of the Harvard Education Letter.

Solving Problems with 'Action Research'

A conversation with Pedro Noguera about the good things that happen when teachers apply research design and methods to addressing the problems in their schools

While teaching at the University of California, Berkeley, Pedro Noguera led the Diversity Project at nearby Berkeley High School, an initiative designed to address the disparity in achievement between white students and students of color and to investigate the causes of racial separation in the school.

Using an action research approach—one that brings research design and methods directly into schools to address what on-site practitioners see as important issues—Noguera collaborated with administrators, teachers, students, parents, and other community members to produce findings that Berkeley school officials now use to address inequities. Assistant editor Michael Sadowski spoke with Noguera, now Professor of Communities and Schools at the Harvard Graduate School of Education, about how action research can help schools.

Can you start by giving us a working definition of action research?

I think of action research as research that makes itself directly relevant to practice and policy. That is its goal, to influence either or both of those. Therefore, it needs to be intelligible. It needs to be useful. It needs to be collaborative, whenever possible. And it needs to be driven by the concerns of those who are doing the work, rather than by the concerns of the researcher.

Let's say a group of professionals in a school building or a district—a superintendent, a principal, some teachers—identify a serious systemic problem. They think an action research model might help solve it. How do they begin?

The best place to start is with the data you already have. Schools amass a lot of data related to attendance, grades, test scores, disciplinary issues, [and] data on course enrollment, if it's a high school. All of that can say something about what's going on in the school, if it's [broken down and] analyzed by different categories that are relevant, such as race, geography, or socioeconomic status. You can also collect qualitative data. Focus groups with kids and teachers, surveys, even discussions with parents give you a sense of how people connected to a school perceive the issues in that school.

The next step is to ask, what are the patterns? You're going to look for patterns that might tell you something about how well different kids are being served at the school. The data isn't magic by itself; it doesn't speak for itself. It needs to be interpreted.

Once you've collected, analyzed, and made sense of the data, the next question is, how do you present it and use it as the basis for discussion with that school community? [The reason it's] important, and why action research is helpful, is that it can provide a way for people to chal-

lenge their assumptions about what's going on in a school.

Data provides a certain amount of detachment, a way for people to engage in a conversation about some really complicated and controversial issues without getting defensive and without personalizing blame.

What about moving beyond the data to design a comprehensive research plan on a particular issue?

The first step is to build a team to do the work. It helps if you have a university partner who's done research before, who can help with both the collection and the analysis. [It] helps if you can pay for people's time. Teachers can't do this on top of their existing schedules. In our project, we bought teacher time, one or two periods, so they would have time to work on the research. We also compensated parents and kids who worked with us. That's the way you get consistent participation. The collaboration of all those constituencies was important. Our sense was that it's the process of inquiry, as well as the product of it, that's transformative. Posing the question, coming up with the answers, and then discussing them—that whole cycle is what leads to new ways of thinking about familiar issues.

How do people in a school district connect with a university researcher?

If you have a college or university near you, [find out] who on the faculty, based upon their background and interests, might be willing to work with the district in a collaborative way on an endeavor like this. The thing to keep in mind, though, is that universities often don't provide a lot of support for faculty to get involved in this kind of work because it's not the traditional approach to research. It's easier if you go after someone who's a little more established, rather than someone who's brand new. And it's easier if it's someone who understands schools and the issues that schools are going through, rather than someone who primarily views schools as sites for research but is not open to collaborating with practitioners, kids, and parents. It's a different way of thinking about research.

What are some of the pitfalls of action research?

One issue is denial within the school about what's going on—or at least a lot of rationalization. In a school where there have been consistent patterns of failure for certain kinds of kids, it's often the case that people locate the source of that failure in the kids themselves, or in their culture, their community, or their parents.

That's where the research can play a role in challenging people's assumptions and getting them to see how they can think differently about why kids succeed or don't succeed. Some teachers are very willing to accept credit for success—the kids who go to good colleges—but they're not so willing to take responsibility for the kids who don't succeed.

How can you make sure things don't fall apart at the implementation level?

That's the hardest part. That was the issue that we encountered at Berkeley High. We did the work, we generated good findings, we shared it with the school board. [But] the school itself did not have the capacity to implement the ideas. It had gone through three principals in four years. It was in disarray from an organizational standpoint. In that kind of environment, it's very hard to get people to think about things like student achievement and equity because they're worried about whether or not the bathrooms are going to work and whether or not they can get copies made. So the learning goals take second place to the survival goals.

Implementation really depends on institutional capacity and leadership. Do you have leaders who know how to go about the implementation? Do they have the buy-in of their staff, and do they have the capacity, the resources, to pull it off?

"Action research data provides a way for people to engage in a conversation about complicated, controversial issues without getting defensive."

Are there any issues that would be tough to address through action research?

Issues around teacher effectiveness need a different form. Those issues are very personal for teachers. That work is very important, but it needs to happen in a setting where people don't feel as though they're going to be scrutinized and their weaknesses are going to be used against them. We thought about how to provide teachers with support but to do it in a way that's safe for them. We ended up with an action research project that was all teacher run, where we had teachers actually collecting data on their own work and sharing it with each other. That seemed to work well.

Any other advice for educators who are thinking of starting an action research project?

The most difficult part is the public discussion of the research. You want to do that in a way that's constructive, that doesn't result in incrimination. It's very important to think that through ahead of time because the data can sometimes seem to indict the school. How are you going to make sure this is constructive? What are the goals? What are the next steps?

This interview first appeared in the September/October 2001 issue of the Harvard Education Letter.

Schools Get Creative to Find Good Substitute Teachers

With rising standards and increasing teacher shortages, schools need subs who can help make every school day count

By Karen Kelly and Michael Chavez Reilly

Every day at 6 a.m., Charlie Skidmore, assistant headmaster at the Brighton (MA) High School, calls the city's school department to find out how many teachers will be absent and how many substitutes he'll need to cover their classes. When there aren't enough subs, teachers have to double up on classes, skip needed preparation time, and miss opportunities for professional development. "It puts a strain on everyone," says Skidmore. And not just at Brighton. Across the country, school districts are scrambling to find substitutes to fill in for missing teachers.

Several national trends have fed the shortfall: ballooning student enrollments, dwindling ranks of teachers, and low unemployment rates have given potential subs other options. From Florida to California, Texas to New York, newspaper headlines trumpet the need for more teachers. In many cases, experienced subs are getting hired for those jobs, creating even bigger gaps in the substitute ranks.

"We were short of substitutes almost every day last year," reports Bob Minthorn, supervisor for school personnel in Hillsborough County, FL. "On our worst day, we needed 1,122 subs and I could only fill 914 of those vacancies. Substitutes who wanted to be teachers are long gone—they've been hired [as full-time teachers]."

"You want to be sure that what the sub is doing is good for the children. Otherwise, reform backfires."

Meanwhile, as schools come under increasing pressure to prepare students for state assessments, the need for substitutes grows exponentially. More subs are required to stand in for regular teachers engaged in much-needed professional activities like mentoring, collaborative assessment, and development workshops. The Substitute Teaching Institute at Utah State University, an organization founded in 1995 to improve the training of substitutes, estimates that one full year of a student's K–12 years will be spent with substitute teachers.

That kind of pressure is pushing schools, even in the face of sub shortages, to find well-qualified fill-ins. Subs have to be more than the "warm bodies" and "babysitters" they've been derisively labeled. But what can be done to attract and keep good substitutes? Some districts are trying the obvious way, offering better pay and benefits, more professional opportunities, and other perks. In Nebraska, for example, districts have engaged in a wage war, boosting substitutes' daily pay by two-thirds, from $45 to $75. When better pay and working conditions aren't enough, administrators have to be more innovative.

Some schools develop partnerships with local colleges and universities. Traditionally, substituting has served as a training ground for new college graduates who want to try out the teaching profession, but few schools have developed formal ties with college education programs.

Trotwood-Madison City School District outside of Dayton, OH, is an exception. The district developed a program with Wright State University in which fifth-year education majors work an entire year as graduate assistants in a school, shadowing a teacher, student teaching, and substituting. Each student is assigned to one classroom, though they may help out elsewhere at times. Principal Jim Brown describes it as a win-win situation: "[The subs] get to know the building, the staff, and one particular classroom very well. And we get people who are on the cutting edge of teaching strategies. They come in like a ball of fire."

The advantage of familiarity is prompting more school districts to hire permanent subs. And while permanent subs usually command more money—not to mention benefits—schools are paying up to keep classrooms operating smoothly. For years, Watertown, MA, kept a few permanent substitutes on the payroll but had trouble finding the additional daily subs it needed, according to Superintendent Sally Dias. Then the city hired "instructional support staff." These part-time, permanent subs are assigned to specific schools for one to three days and, when possible, participate in professional development and staff meetings.

For instance, a graduate student who takes classes Monday, Wednesday, and Friday may work in a school every Tuesday and Thursday. By 1999, the district, which has 3,000 students, employed 40 such teachers and "very rarely needs subs," Dias says. "And there's not the anxiety of having someone in the building whom nobody knows and whose qualifications aren't known."

At Beacon Schools, a private K–12 school in Oakland,

Subbing with Success

When administrators at Giffen Elementary School in Albany, NY, reformed their curriculum in 1998, they had to change the way they use substitute teachers. Giffin, which had some of the city's lowest test scores, had signed on with Success for All, the K–5 intervention developed by Johns Hopkins University.

The program requires students to break into reading groups for 90 minutes each day, during which teachers lead kids through a fast-moving menu of timed tasks. For instance, one exercise requires students to pick out vocabulary words from the text and then write complex, meaningful sentences of their own. Teachers are expected to monitor each student's progress during the class and to keep the pace moving so kids won't get bored.

When the program was first installed, Giffin found that substitute teachers who were unfamiliar with the lesson plans could not cover all the material in a period. "It's rather complex," says Julie Shudt, the school's reading program facilitator. "We may do 15 tasks in 90 minutes. If a substitute is not familiar with it, there's no way they'd get through it." Also, Success for All emphasizes a positive, "democratic" approach to discipline, something subs might not be familiar with.

So, Giffin administrators convinced the district to assign to the school two permanent subs to train with regular teachers in Success for All. One permanent sub, Scott Thompson, says the arrangement made him "feel more useful" because he knew kids were learning. And, he admits, it spared him the dreaded fate dealt to so many subs by bored students: "If they suspect you don't know what you're doing, they're like sharks who smell blood in the water. You never want to look like you're lost."

CA, founder Thelma Farley included "flexible teachers" who act as permanent subs in the school's educational design. Since the school operates year round, teachers typically take four to six weeks off at different times throughout the year. When subs are needed, the "flexes" take over. When they're not subbing, the flexes work alongside regular teachers as aides and tutors, and they are included in all staff meetings and professional development. "They are part of the staff and become colleagues with the teachers," says Farley. "They're often people who enjoy teaching but don't want the responsibility of their own classroom."

The Boston Public Schools, a larger district, uses what is called a "cluster strategy" in which subs are assigned to a home school within one of the district's ten clusters of schools. On those rare days when a home school is fully staffed, subs tutor or work at other schools in the cluster. That approach lets subs become familiar to kids and regular staff, and familiarity, administrators say, is a key element in solving discipline problems.

While cluster subs are expected to fill in at different grade levels and subjects, they are usually assigned according to their interests and academic backgrounds. They negotiate their terms through the Boston Teacher's Union, are guaranteed a full year of work ($92 per day), and earn sick days and health benefits. "The new cluster sub strategies allow us to assign the better qualified people with more experience under their belts to these positions," reports Beverly Pina, assistant manager for human resources for the Boston schools.

An increasing number of schools are turning to temp agencies to find subs. One example is Kelly Staffing Services, which has 1,200 offices across the United States. In 1999, the company launched a subsidiary, Kelly Educational Staffing, to manage its growing ranks of substitute teachers. "In the last few years, school districts, particularly in the South, have approached our local branches with this need," says Theresa Setting, director of product management for Kelly Educational. The subs become Kelly employees and the agency provides all salaries, benefits, and training.

The training and professional development of substitutes are growing concerns as schools look to improve the performance of both teachers and students. At Utah State University's Substitute Teacher Training Institute, Geoffrey Smith created a program to train subs and study their effectiveness (see sidebar). He considers training a crucial element that is missing from most districts, particularly in the areas of classroom management and discipline.

Hillsborough County, FL, has trained 150 substitutes, providing a reliable pool of substitute teachers who have stayed with the district. The program began as a three-day course for college graduates who didn't have teaching degrees. The first two days covered everything from discipline to using audiovisual equipment; the third day was reserved for job shadowing. But as the numbers of col-

lege-educated subs dwindled, he turned to training those with just high school degrees. He began offering a 10-day substitute-training course that included refreshers in academic subjects—and doubled his pool of subs in the process.

While those few days of training are hardly ideal—and while Hillsborough still has shortages—it's a step in the right direction, says district personnel director Bob Minthorn: "We have half as many complaints from substitutes who go through the training as from those who don't. I really think the more training you have, the better job you'll do."

Joyce Evans, program director for the National Science Foundation's Teacher Enhancement Program, says that substitute teachers can make or break school reform efforts. "If you use substitutes on a regular basis, you want to be sure that what the sub is doing is good for the children," notes Evans. "Otherwise, the reform backfires." Seventy-two school districts have received NSF grants to retrain their teaching staff in math and science education. The NSF encourages them to include substitutes in the program. "We make sure what's going on when teachers are absent is still good stuff," Evans says.

The Midland Public School District near Detroit is one of the NSF grant recipients. For the past four years the district has conducted a two-week summer institute that trains elementary schoolteachers and substitutes to teach science. "[The subs] show more confidence in their instruction and ability to supplement what the science teachers are doing," according to Sarah Lindsey, the district's science curriculum coordinator. "This also gives them the chance to work with the teachers for whom they sub. It gives them the chance to collaborate." Each year, one or two substitutes taking part in the workshops have been hired as full-time teachers after principals noticed their improved skills.

Subs say that schools could go a long way toward solving shortages just by making the workplace more inviting. "The tone of a school is set at the top," says New York City sub Davida Weber. "If you are a warm administrator and welcome newcomers, then teachers will welcome subs with less suspicion and more affection." That includes taking care of basic needs: "Usually I carry my coat and bag around with me all day. I'd love to have a place where I can put my stuff."

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For Further Information

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National Substitute Teachers Alliance, 1128 West San Ramon, Fresno, CA 93711; 888-304-4001 (toll free). **www.nstasubs.org**

Using Water to Light Kids' Fires

In 1983, Utah State University started a program designed to train K–12 teachers to teach water conservation, an important topic in the arid state. But the International Institute for Water Education—a joint project of the university's education and engineering colleges—never really won the interest of schools.

So, in 1994, education researcher Geoffrey Smith, one of the program's founders, decided to get the message out through another group: substitute teachers. Within a year, the water education institute had become the Substitute Teacher Training Institute, where subs learn basic teaching skills. Smith also got funding from the U.S. Department of Education for a study on what makes substitutes effective.

Subs, says Smith, usually rely on schools to provide the day's lesson plans. But what if the sub knows nothing about the topic? What if no lesson plan is prepared at all? Smith reasoned that subs need to have some backup lesson based on a topic they care about or at least know about. He developed a science curriculum for subs. With funding from Utah's Environmental Protection Agency, he visits schools and trains subs to teach specific science lessons such as using bubbles to demonstrate surface tension.

"They can bring this one lesson to a classroom. Kids get really excited when a sub says, 'We'll do your regular work first and then try this,'" Smith says. "It's a question of what you want from a class. If we ask a sub to teach something they are good at, they may end up being more effective." In other words, kids will at least learn something.

According to Smith, many of the subs he's trained say they are no longer greeted by kids with groans and spitballs, but by students eager to see if they'll spend their classtime building boats or blowing bubbles.

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